IP Video Telephony Configuration

This topic provides an overview of how IP Video Telephony was configured for Cisco IP Communications Release 5.1(1) testing. This topic does not include detailed installation and configuration instructions. Rather, it is intended to provide you with guidance and serve as a reference as you set up video devices in your IP telephony solution.

For additional information and guidelines for implementing Cisco IP Video Telephony, refer to the documents listed Table 12-1. You can also refer to documentation provided by the vendors of Tandberg video endpoints and Polycom video endpoints.

Table 12-1   IP Video Telephony Related Documentation

Document	Reference
Cisco Unified CallManager System Guide "Understanding Video Telephony" chapter	http://www.cisco.com/univercd/cc/td/doc/product/ voice/c_callmg/5_0/sys_ad/5_0_2/ccmsys/index.htm
*IP Video Telephony Solution Reference Network Design (SRND) for Cisco Unified CallManage*r	http://www.cisco.com/go/srnd
Cisco Unified Videoconferencing 3500 Series video conferencing products documentation	http://www.cisco.com/en/US/products/hw/video/ ps1870/tsd_products_support_series_home.html
Cisco Unified Video Advantage documentation	http://www.cisco.com/en/US/products/sw/voicesw/ ps5662/tsd_products_support_series_home.html
Deploying Video Telephony	http://cco/en/US/partner/about/ac123/ac114/ac173/ Q3-04/tech_videotel.html (You must be a registered user of Cisco.com to access this URL)

This topic includes the following sections:

IP Video Telephony Components and Topology

The IP Video Telephony test deployment included the following components:

- Cisco Unified IP Phone 7985
- Cisco Unified Video Advantage
- Cisco Unified Videoconferencing 3521 with EMP
- Cisco Unified Videoconferencing 3526
- Cisco Unified Videoconferencing 3540 MC10A/MC10A MCU with EMP3
- Cisco Unified Videoconferencing 3540-GW2P
- Cisco Unified Videoconferencing 3545 MCU with EMP3
- Cisco Unified Videoconferencing 3545-GW2P
- Third-party SCCP endpoints
- Third-party H.323 endpoints
- SCCP/H.323 conference bridge

Figure 12-1 shows how Cisco IP Video Telephony was deployed in Cisco IP Communications Release 5.1(1).

Figure 12-1   IP Video Telephony Topology

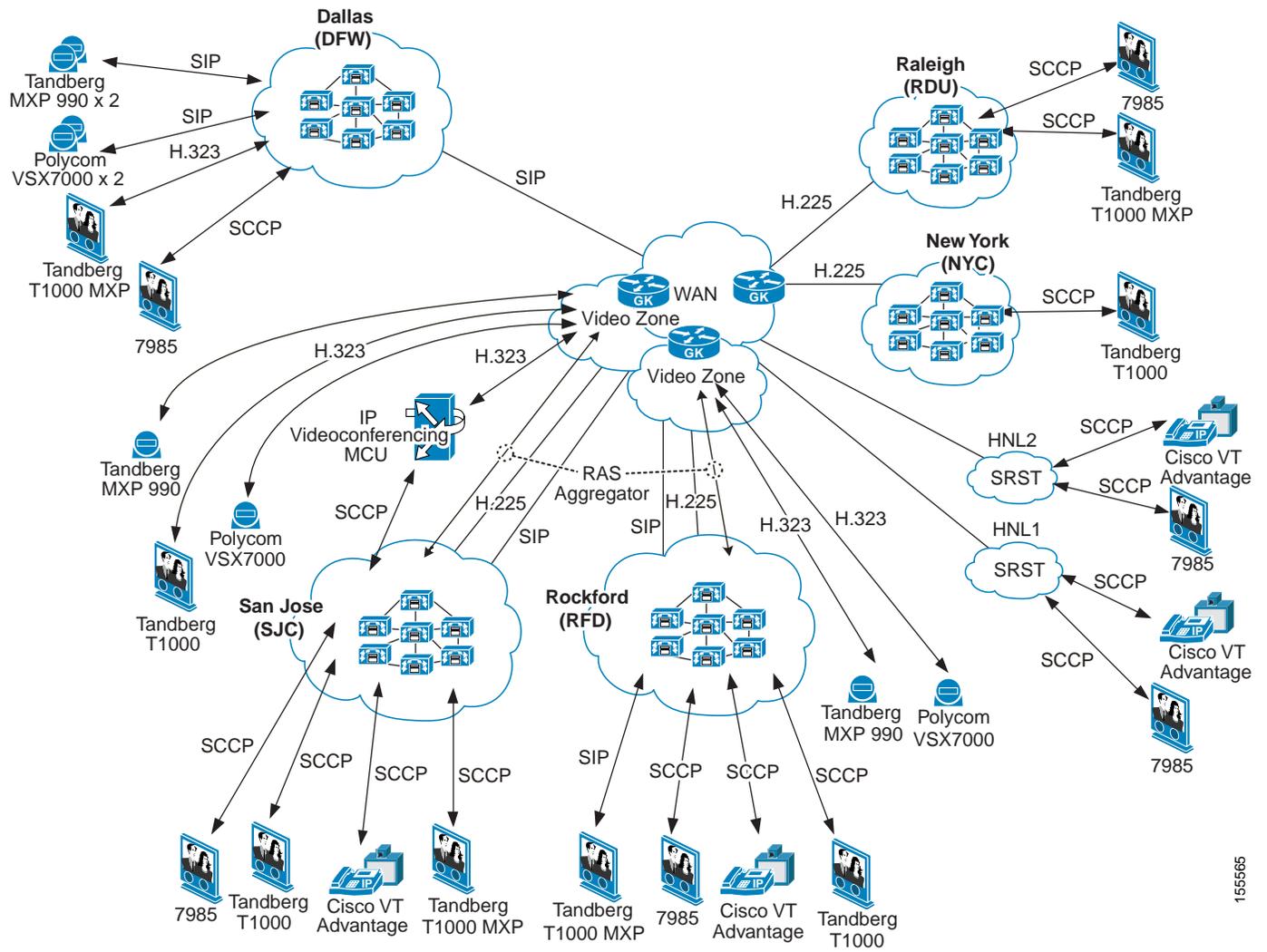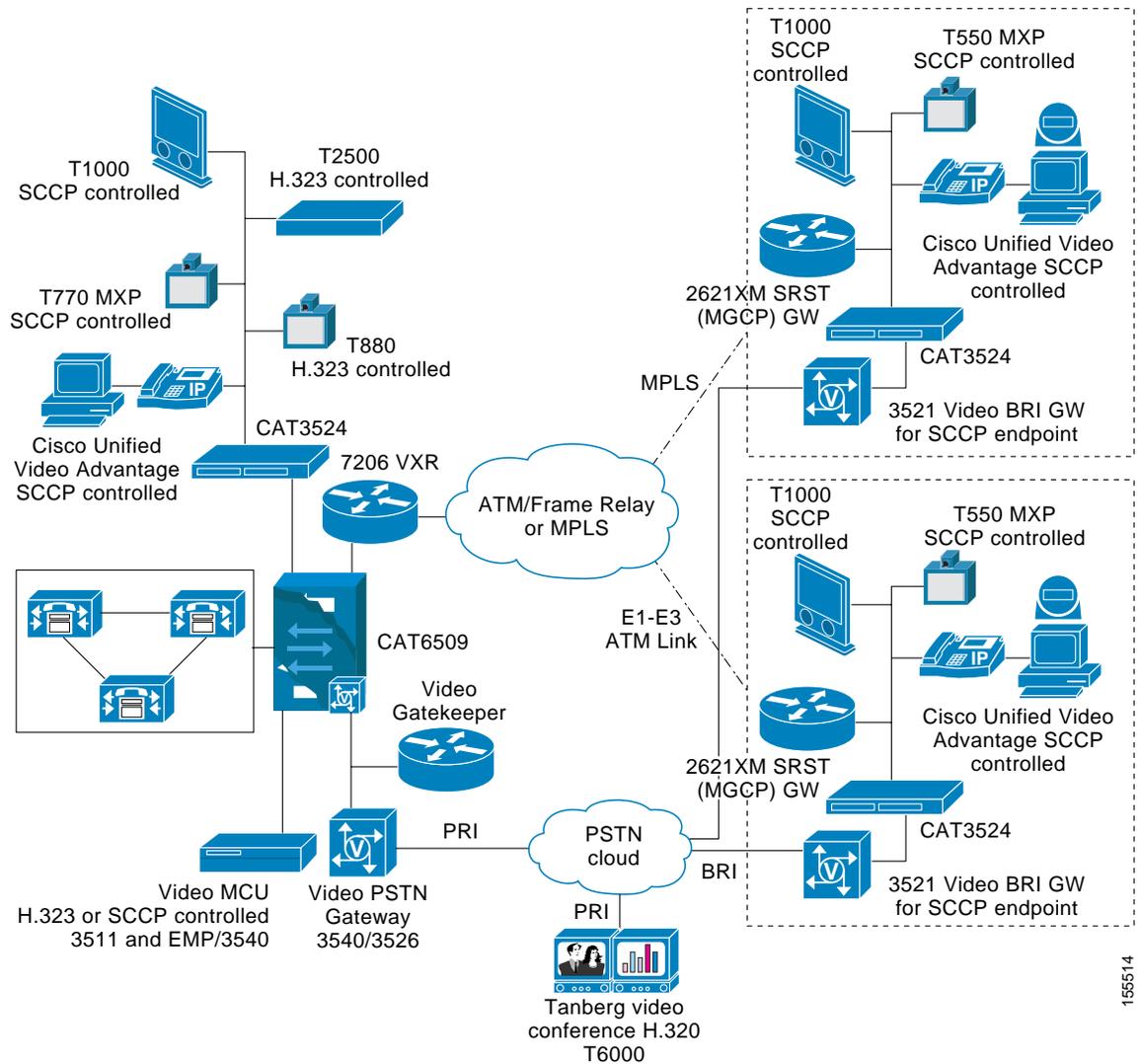Figure 12-2 shows an example of a multi-site centralized video deployment that uses a Cisco IP Video Telephony PSTN gateway.

Figure 12-2   *Multi-Site Centralized Video Deployment using Cisco IP Video Telephony PSTN Gateway*

Supported Call Types

The IP Video Telephony deployment supports video calls made between endpoints as shown in Table 12-2. In this table,

- V = video and audio

- A = audio only

Table 12-2   IP Video Telephony Call Type Matrix

	Third Party SCCP Endpoint	Third Party H.323 Endpoint	Cisco Unified IP Phone 7985	SCCP Cisco Unified Video Advantage	SCCP Audio Only	SCCP MCU Confer-ence	H.323 MCU Confer-ence	PSTN Gate-ways	PSTN Cisco Unified VIdeo-confer-encing
Third Party SCCP Endpoint	V	V	V	V	A	V	V	A	V
Third Party H.323 Endpoint	V	V	V	V	A	V	V	A	V
SCCP Cisco Unified Video Advantage	V	V	V	V	A	V	V	A	V
SCCP Audio Only	A	A	A	A	A	A	A	A	A
SCCP MCU Conference	V	V	V	V	A	V	V	A	V
H.323 MCU Conference	V	V	V	V	A	V	V	A	V
PSTN[1] Gateways	A	A	A	A	A	A	A	A	A
H.225 Trunk	V	V	V	V	A	V	V	A	V
SIP Trunk	V	V	V	V	A	V	V	A	A

1. PSTN = public switched telephone network.

Note   Cisco Unified CallManager 5.1 supports security on the Cisco Unified IP Phone 7940G/7941G/7960G/ 7961G/ 7970G/7971G running SCCP. These phone models also have video capabilities when associated with Cisco Unified Video Advantage. If two secure video-capable endpoints call each other, the SCCP signaling and audio media path will be encrypted. Video will work, however signaling and the video media path to Cisco Unified Video Advantage will not be encrypted.

Call Routing

The IP Video Telephony deployment supports the following call routings. SCCP endpoints include SCCP Tandberg T1000, and Cisco Unified Video Advantage associated with Cisco IP Phone models 7940G/7960G/7970G. H.323 endpoints include H.323 Tandberg T1000 and Polycom VSX 7000.

- SCCP endpoint > Cisco Unified CallManager > SCCP endpoint
- H.323 endpoint > Gatekeeper > Cisco Unified CallManager > SCCP endpoint
- SCCP endpoint > Cisco Unified CallManager > Gatekeeper > H.323 endpoint

- H.323 endpoint > Gatekeeper > Cisco Unified CallManager > Gatekeeper > H.323 endpoint

- SCCP endpoint > Cisco Unified CallManager > Gatekeeper > Cisco Unified CallManager > Gatekeeper > H.323 endpoint

- SCCP endpoint > Cisco Unified CallManager > SIP trunk> Cisco Unified CallManager > Gatekeeper > H.323 endpoint

- SCCP endpoint > Cisco Unified CallManager > SIP trunk> Cisco Unified CallManager > SCCP endpoint

- H.323 endpoint > Gatekeeper > Cisco Unified CallManager > Gatekeeper > Cisco Unified CallManager > SCCP endpoint

- H.323 endpoint > Gatekeeper > Cisco Unified CallManager > Gatekeeper > Cisco Unified CallManager > Gatekeeper > H.323 endpoint

- H.323 endpoint > Gatekeeper > Cisco Unified CallManager > SIP Trunk > Cisco Unified CallManager > Gatekeeper > H.323 endpoint

- SCCP endpoint > Cisco Unified CallManager > Gatekeeper > Cisco Unified CallManager > SCCP endpoint

- SCCP adhoc or Meet-Me video conferences with these call flows:

  - SCCP endpoint > Cisco Unified CallManager > SCCP MCU

  - SCCP endpoint > Cisco Unified CallManager > Gatekeeper > Cisco Unified CallManager > SCCP MCU

  - SCCP endpoint > Cisco Unified CallManager > SIP trunk > Cisco Unified CallManager > SCCP MCU

  - H.323 endpoint > Gatekeeper > Cisco Unified CallManager > SCCP MCU

  - H.323 endpoint > Gatekeeper > Cisco Unified CallManager > Gatekeeper > Cisco Unified CallManager > SCCP MCU

  - H.323 endpoint > Gatekeeper > Cisco Unified CallManager > SIP trunk > Cisco Unified CallManager > SCCP MCU

- H.323 adhoc or scheduled video conferences with these call flows:

  - SCCP endpoint > Cisco Unified CallManager > H.323 MCU

  - SCCP endpoint > Cisco Unified CallManager > Gatekeeper > Cisco Unified CallManager > H.323 MCU

  - SCCP endpoint > Cisco Unified CallManager > SIP trunk > Cisco Unified CallManager > H.323 MCU

  - H.323 endpoint > Gatekeeper > Cisco Unified CallManager > H.323 MCU

  - H.323 endpoint > Gatekeeper > Cisco Unified CallManager > Gatekeeper > Cisco Unified CallManager > H.323 MCU

  - H.323 endpoint > Gatekeeper > Cisco Unified CallManager > SIP trunk> Cisco Unified CallManager > H.323 MCU

- PSTN call with these call flows:

  - SCCP endpoint > Cisco Unified CallManager > Cisco Unified Videoconferencing gateway > PSTN > Cisco Unified Videoconferencing gateway > Gatekeeper > Cisco Unified CallManager > SCCP endpoint

- – SCCP endpoint > Cisco Unified CallManager > Cisco Unified Videoconferencing gateway > PSTN > Cisco Unified Videoconferencing gateway > Gatekeeper > Cisco Unified CallManager > H.323 endpoint

- – SCCP endpoint > Cisco Unified CallManager > Cisco Unified Videoconferencing gateway > PSTN > H.320 endpoint

- – H.323 endpoint > Gatekeeper > Cisco Unified CallManager > Cisco Unified Videoconferencing gateway > PSTN > H.320 endpoint

- – H.323 endpoint > Gatekeeper > Cisco Unified CallManager > Cisco Unified Videoconferencing gateway > PSTN > Cisco Unified Videoconferencing gateway > Gatekeeper > Cisco Unified CallManager > SCCP endpoint

- – H.320 endpoint > Cisco Unified Videoconferencing Gateway > Gatekeeper > Cisco Unified CallManager > SCCP or H.323 endpoint

The call routing for video calls functions just as the call routing for audio calls. For more information, refer to the "Understanding Video Telephony" chapter in *Cisco Unified CallManager System Guide*.

Cisco Unified CallManager supports the Dynamic H.323 Addressing call routing feature. This feature allows H.323 endpoints with DHCP addressing to remain registered to a Gatekeeper while Cisco Unified CallManager controls call routing. For more information, refer to the "Understanding Video Telephony" section in *Cisco Unified CallManager System Guide*. (Table 12-1 provides a link to this document.)

Gatekeeper Configuration for IP Video Telephony

The following sections provide a general description of how gatekeepers were configured for IP Video Telephony:

- • Gatekeeper Configuration Overview, page 12-7

- • Gatekeeper Call Routing, page 12-9

Gatekeeper Configuration Overview

Gatekeepers were configured in pairs to create gatekeeper clusters that provide gatekeeper-based Call Admission Control and call routing redundancy. The endpoints must provide alternate gatekeeper registration so that the endpoints can utilize both gatekeepers in the cluster.

Three local gatekeeper zones were created, one for Cisco Unified CallManager, one for Cisco Unified Videoconferencing MCUs, and one for the H.323 endpoints. Zones for Cisco Unified Videoconferencing MCUs and H.323 endpoints were configured with Invia and Outvia parameters. This configuration allows gatekeepers to route incoming and outgoing calls to and from these zones to Cisco Unified CallManager.

The Send Product ID And Version ID Cisco Unified CallManager service parameter must be set to True to allow the Dynamic H.323 Addressing feature to work and to allow the gatekeeper to route incoming or outgoing calls to the Cisco Unified CallManager in a given zone.

After the Cisco Unified CallManager service parameter Send Product ID And Version ID is set to True, the endpoint type of Cisco Unified CallManager H.225 trunks will change to H323-GW.

The following partial output from the Show Gatekeeper Endpoints command shows a single Cisco Unified CallManager H.225 trunk that is registered to a gatekeeper:

```
SJC-RFD-GK-1#show gatekeeper endpoints
                    GATEKEEPER ENDPOINT REGISTRATION
```

```
                     ================================
CallSignalAddr  Port  RASSignalAddr    Port  Zone Name     Type     Flags
--------------- ----- --------------- ----- --------- ---- -----
0.9.10.5        33209 10.9.10.5        32783 SJC-MP-GK-1      H323-GW
     H323-ID: SJC-RFD-MP-1-CM1_2_3

Voice Capacity Max.= Avail.= Current.= 0
```

Zone prefixes were configured in the Cisco Unified CallManager zone for intercluster call flows. This configuration is required for intercluster gatekeeper-controlled call routing. The other two zones do not require a local zone prefix to be configured. The endpoints and MCUs are directed to these zones by the Zone Subnet command in the gatekeeper configuration.

The Cisco Unified CallManager cluster uses the default technology prefix 1#* to register its gatekeeper-controlled intercluster trunks in the Cisco Unified CallManager zone. Then, Cisco Unified CallManager cluster registers a dedicated H.225 gatekeeper-controlled trunk to the MCU zone. The trunk and the MCU zone are used for invites initiated from the MCU Conference control web pages. Finally, the Cisco Unified CallManager cluster registers a special trunk called RasAggregator to the H.323 endpoints zone. This trunk is dynamically created and registered as a result of the H.323 endpoints device pool configuration in Cisco Unified CallManager.

The following partial output from the Show Gatekeeper Endpoints command shows a single Cisco Unified CallManager RasAggregator trunk that is registered to a gatekeeper:

```
SJC-RFD-GK-1#show gatekeeper endpoints
                  GATEKEEPER ENDPOINT REGISTRATION
                  ================================
CallSignalAddr  Port  RASSignalAddr    Port  Zone Name        Type
--------------- ----- --------------- ----- --------- ----
10.9.10.5       33206 10.9.10.5        32783 SJC-VIDEO-GK-1      H323-GW
     H323-ID: RasAggregator_1#*_SJC-VIDEO-GK-1_3
     Voice Capacity Max.= Avail.= Current.= 0
```

A single RasAggregator trunk was created for all gatekeeper-controlled H.323 endpoints that share the same gatekeeper zone and Cisco Unified CallManager group. All gatekeeper-controlled H.323 endpoints within the same gatekeeper endpoint zone must be configured as part of the same Cisco Unified CallManager group and device pool, otherwise Cisco Unified CallManager will register multiple RasAggregator trunks to a single gatekeeper endpoint zone. In this situation, some incoming calls from the H.323 endpoints will fail.

Note   This configuration prevents gatekeeper-controlled H.323 endpoints from being load balanced across multiple Cisco Unified CallManager servers by using device pools and Cisco Unified CallManager groups. One way to accomplish such load balancing is to create multiple gatekeeper zones dedicated to H.323 endpoints for each device pool or Cisco Unified CallManager group.

For an example of a video gatekeeper configuration, see the >>>>>>>

Gatekeeper Call Routing

Calls are routed through the gatekeeper as follows:

- Inbound call to Cisco Unified CallManager zone from other gatekeepers—Routed to the registered Cisco Unified CallManager Gatekeeper-controlled H.225 intercluster trunks within the Cisco Unified CallManager zone in a Round Robin distribution algorithm using the Default Technology prefix.

- Outbound call from Cisco Unified CallManager zone to other gatekeepers—Normal gatekeeper call routing using location request.

- Inbound Call to MCU zone from other gatekeepers—Routed out to the registered Cisco Unified CallManager gatekeeper-controlled H.225 intercluster trunks within the Cisco Unified CallManager zone in a round robin distribution algorithm using the Default Technology prefix. Then routed by Cisco Unified CallManager directly to the MCU via its H.323 gateway.

- Outbound call from MCU—Routed to Cisco Unified CallManager via the MCU dedicated H.225 gatekeeper-controlled trunks that are registered to the MCU zone.

- Outbound call from H.323 endpoints—Routed to Cisco Unified CallManager via RasAggregator H.225 trunk.

- Inbound call from other Gatekeepers to H.323 endpoints—Call is first routed out the Registered Cisco Unified CallManager gatekeeper-controlled H.225 trunk within the Cisco Unified CallManager zone in a round robin distribution algorithm using the Default Technology prefix. It is then routed back to the gatekeeper video endpoint zone via the RasAggregator trunk.

- Inbound call from MCUs to H.323 endpoints—Call is first routed to Cisco Unified CallManager via the MCU dedicated H.225 gatekeeper-controlled trunks that are registered to the MCU zone. It is then routed back to the Gatekeeper Video endpoint zone via the RasAggregator trunk.

- Inbound call from Cisco Unified Videoconferencing gateway—Call is routed to the registered Cisco Unified CallManager gatekeeper. The gatekeeper receives an admission request from the Cisco Unified Videoconferencing gateway, and the gatekeeper replies with an admission confirm to send the call to Cisco Unified CallManager via the RasAggregator trunk.

Cisco Unified Videoconferencing 3540 MCU Conference Bridge Configuration for IP Video Telephony

This section provides basic information about configuring the Cisco Unified Videoconferencing 3540 for IP video telephony.

For related information, refer to *Administrator's Guide for Cisco Unified Videoconferencing 3511 MCU and Cisco Unified Videoconferencing 3540 MCU Module Releases*, which are available at this URL:

http://www.cisco.com/en/US/products/hw/video/ps1870/prod_maintenance_guides_list.html

The Very Large Campus Clustering over the WAN deployment model consisted of these components:

- 3544 Cisco Unified Videoconferencing chassis
- Cisco Unified Videoconferencing 3544 System 100-port MCU module
- EMP3 board

In addition, these components were tested in the Large Multi-Site Centralized with SRST site model for EUEM:

- 3544 Cisco Unified Videoconferencing chassis
    - Cisco Unified Videoconferencing 3544 System 60-port MCU module
    - EMP3 board
- 3511 MCU with integrated EMP

The configuration of the 3511 is are similar to the 3540 MCU configuration that this section describes.

Half of the Cisco Unified Videoconferencing-3540-MC10A MCU ports were configured to register as a SCCP Cisco video conference bridge (Cisco Unified Videoconferencing-35xx) device and were registered with Cisco Unified CallManager. The remaining ports were deployed as H.323 video conference resources and registered to the gatekeeper cluster in the MCU zone.

When deployed in a Cisco Unified CallManager SCCP environment, the primary function of the Cisco Unified Videoconferencing MCU is to provide media processing for conferences. In this capacity, the Cisco Unified Videoconferencing MCU negotiates parameters with the terminals participating in a conference, and it provides media processing. Cisco Unified CallManager manages the call flow. Terminals use Cisco Unified CallManager processes to initiate conferences, and Cisco Unified CallManager manages the allocation of Cisco Unified Videoconferencing MCU resources.

When deployed in an H.323 environment, the Cisco Unified Videoconferencing MCU manages its own resources and provides media processing. Calls are initiated using the processes that the Cisco Unified Videoconferencing MCU uses for H.323 terminals. In this scenario, you must configure Cisco Unified CallManager to communicate with an H.323 gatekeeper for inbound calls from the MCU. For outbound calls, you must configure in Cisco Unified CallManager an H.323 gateway with the MCU IP address as the device name. This arrangement allows SCCP terminals to participate in conferences that include other SCCP terminals, H.323 terminals, or terminals of both types.

The following tables show how the Cisco Unified Videoconferencing 3540 MCU was configured using the Cisco Unified Videoconferencing Administrator web page. Fields not shown in these tables were set to their default values.

- Table 12-3—IP/VC Board > Basics
- Table 12-4—IP/VC Board > Addressing
- Table 12-5—IP/VC MCU > Settings > Basics
- Table 12-6—IP/VC MCU > Protocols > H.323 Protocol Configuration
- Table 12-7—IP/VC MCU > IP/VC MCU > Protocols > H.323Protocol Configuration > Advanced Gatekeeper Settings
- Table 12-8—IP/VC MCU > Protocols > SCCP Protocol Configuration

Table 12-3   Cisco Unified Videoconferencing MCU Configuration: IP/VC Board > Basics

Field	Setting
Board name	MC10A
Location	*Appropriate value*
Serial number	*Appropriate value*
Hardware version	*Appropriate value*
Date/Time	*Appropriate value*

Table 12-3   *Cisco Unified Videoconferencing MCU Configuration: IP/VC Board > Basics*

Field	Setting
Slot number	*Appropriate value*
Software version	4.2.10

Table 12-4   *Cisco Unified Videoconferencing MCU Configuration: IP/VC Board > Addressing*

Field	Setting
IP Address	*Appropriate value*
Subnet Mask	*Appropriate value*
Router IP	*Appropriate value*
DNS Suffix	XX.com
Preferred DNS server	*Appropriate value*
Alternate DNS server	*Appropriate value*
Port type	Ethernet-CSMA/CD
MAC Address	*Appropriate value*
Port settings	100/Mbps / Full Duplex
Port status	100/Mbps / Full Duplex

Table 12-5   *Cisco Unified Videoconferencing MCU Configuration: IP/VC MCU > Settings > Basics*

Field	Setting
MCU Mode	MCU
Number of SCCP ports	30

Table 12-6   *Cisco Unified Videoconferencing MCU Configuration: IP/VC MCU > Protocols > H.323 Protocol Configuration*

Field	Setting
Activate protocol settings	Checked
Description	H.323 Protocol Configuration
Registration Name	SJC-RFD-MCU-1
Gatekeeper Address	10.9.12.99
Gatekeeper Port	1719
Strip zone prefix	Unchecked
Enable H.329	Unchecked
Enable Fast Start	Unchecked
Enable generic audio capabilities	Unchecked

Table 12-6   Cisco Unified Videoconferencing MCU Configuration: IP/VC MCU > Protocols > H.323 Protocol Configuration (continued)

Field	Setting
Enable alternate Gatekeeper	Unchecked
Enable H.245 tunneling	Unchecked

Table 12-7   Cisco Unified Videoconferencing MCU Configuration: IP/VC MCU > Protocols > H.323 Protocol Configuration > Advanced Gatekeeper Settings

Field	Setting
MCU Registration Mode	MCU

Note   The configuration shown in Table 12-7 directly affects gatekeeper call routing. If MCU Registration Mode is not set to MCU and instead left at its default setting of Gateway, gatekeeper call routing may not function in the Very Large Campus Clustering over the WAN deployment model.

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Table 12-8   Cisco Unified Videoconferencing MCU Configuration: IP/VC MCU > Protocols > SCCP Protocol Configuration

Field	Setting
TFTP Servers: IP Address / Port	*Appropriate values*
CallManagers: IP Address / Port	*Appropriate values*
Perform MCU reset on CallManager Reset message	Checked
Local port base	11000
Priority	24
Registration: Retries	3
Initial timeout	30
Consequent timeout	10
Keep Alive: Retries	3
Timeout	10
Recovery mode	Not applicable
Change configuration locally	Unchecked

To create the Cisco Unified CallManager dedicated H.323 service on the MCU, information was copied from the existing default service prefix 87 named Continuous Presence (MP). The only change made to this default service prefix was to change the prefix to 25. This prefix must be used when configuring Cisco Unified CallManager route patterns, as described in the "Route Pattern Configuration for MCU Service" section on page 12-25.

Cisco Unified Videoconferencing Gateway Configuration for Video PSTN Gateway

This section provides information about configuring a Cisco Unified Videoconferencing gateway for a video PSTN gateway.

For related information, refer to this URL:

http://www.cisco.com/univercd/cc/td/doc/product/ipvc/ipvcgw/index.htm

The following tables show how the 2 PRI port version of the Cisco Unified Videoconferencing 3544 System Gateway module was configured using the Cisco Unified Videoconferencing Administrator web page. Fields not shown in these tables were set to their default values.

- Table 12-9—IPVC/3540 GW > Board > Basics
- Table 12-10—IPVC/3540 GW > Board > Addressing
- Table 12-11—IPVC/3540 GW > Settings > Basics
- Table 12-12—IPVC/3540 GW > Settings > IP Connectivity
- Table 12-13—IIPVC/3540 GW > Settings > Media Modes
- Table 12-14—IIPVC/3540 GW > Settings > Bonding
- Table 12-15—IPVC/3540 GW > Services > Voice
- Table 12-16—IPVC/3540 GW > Services > Video
- Table 12-17—IPVC/3540 GW > PRI > Port 1 Basics
- Table 12-18—IPVC/3540 GW > PRI Port 1 Physical Interface

Table 12-9   Cisco Unified Videoconferencing MCU Configuration: IPVC/3540 GW > Board > Basics

Field	Setting
Model number	IPVC-3540-GW2P
Location	*Appropriate value*
Serial number	*Appropriate value*
Hardware version	*Appropriate value*
Date/Time	*Appropriate value*
Slot number	*Appropriate value*
Software version	4.0.40

Table 12-10   Cisco Unified Videoconferencing MCU Configuration: IPVC/3540 GW > Board > Addressing

Field	Setting
IP Address	*Appropriate value*
Subnet Mask	*Appropriate value*
Router IP	*Appropriate value*
DNS server IP	*Appropriate value*

Table 12-10   *Cisco Unified Videoconferencing MCU Configuration: IPVC/3540 GW > Board >*
Addressing (continued)

Field	Setting
Device DNS name	*Appropriate value*
Port type	Ethernet-CSMA/CD
MAC address	*Appropriate value*
Port settings	100/Mbps / Full Duplex
Port status	100/Mbps / Full Duplex

Table 12-11   *Cisco Unified Videoconferencing MCU Configuration: IPVC/3540 GW > Settings >*
Basics

Field	Setting
Gateway Identifier	*Appropriate value*

Table 12-12   *Cisco Unified Videoconferencing MCU Configuration: IPVC/3540 GW > Settings >*
IP Connectivity

Field	Setting
IP connectivity mode	Using gatekeeper
Specify gatekeeper address	Selected
Gatekeeper address	*Appropriate value*
Gatekeeper port	*Appropriate value*
Gateway registration mode	Version 2

Table 12-13   *Cisco Unified Videoconferencing MCU Configuration: PVC/3540 GW > Settings >*
Media Modes

Field	Setting
Enable G722	Checked
Enable G722.1	Unchecked
Enable G728	Checked
Enable H263	Checked
Enable H263+	Unchecked
Enable H264	Checked
Enable T120	Checked
Enable FECC	Checked

Table 12-14   Cisco Unified Videoconferencing MCU Configuration: PVC/3540 GW > Settings > Bonding

Field	Setting
Enable bonding	Checked
Maximum B channels for a bonded call	*Appropriate value*
For bonded calls, allow downspeeding down to x calls	*Appropriate value*

.

Table 12-15   Cisco Unified Videoconferencing MCU Configuration: PVC/3540 GW > Services > Voice

Field	Setting
Prefix	9
Description	Voice call
Call type	Voice
Bit rate	64
PRI port 1	Enabled
PRI port 2	Enabled

.

Table 12-16   Cisco Unified Videoconferencing MCU Configuration: PVC/3540 GW > Services > Video

Field	Setting
Prefix	79
Description	Video call bonding 6*64
Call type	Voice
Bit rate	384
PRI port 1	Enabled
PRI port 2	Enabled

.

Table 12-17   Cisco Unified Videoconferencing MCU Configuration: PVC/3540 GW > PRI Port 1 > Basics

Field	Setting
Port enable	Checked
Post phones number range	01917400000 to 01917400029
Local area	0191740
Strip Local Area Code	Checked

Table 12-18   Cisco Unified Videoconferencing MCU Configuration: PVC/3540 GW > PRI Port 1 > Physical Interface

Field	Setting
Interface	E1/T1
Country	*Appropriate value*
Network access	*Appropriate value*
Signaling protocol	*Appropriate value*

Cisco Unified CallManager Configuration for IP Video Telephony

The following sections provide an overview of how Cisco Unified CallManager was configured for IP Video telephony testing. For additional information about how Cisco Unified CallManager was configured for Cisco IP Communications Release 5.1(1) testing, see Chapter 2, "Cisco Unified CallManager Configuration."

- Cisco Unified CallManager Configuration Overview, page 12-17
- Region Configuration in Cisco Unified CallManager, page 12-17
- Video Deployment with RSVP, page 12-21
- Gatekeeper Configuration in Cisco Unified CallManager, page 12-23
- MCU Configuration in Cisco Unified CallManager, page 12-23
- Route Pattern Configuration for MCU Service, page 12-25
- Cisco Unified Videoconferencing PSTN Gateway Configuration for Cisco Unified CallManager, page 12-25

Cisco Unified CallManager Configuration Overview

The following table provides an overview of how to configure Cisco Unified CallManager for IP Video telephony.

	Procedure	Reference
Step 1	If you are not using a single Region for all call types, configure Regions.	• Refer to the "Region Configuration" chapter in *Cisco Unified CallManager Administration Guide*. • Refer to the "Call Admission Control" chapter in *Cisco Unified CallManager System Guide*.
Step 2	If you use locations for call admission control, configure locations for video call bandwidth.	• Refer to the "Location Configuration" chapter in *Cisco Unified CallManager Administration Guide*. • Refer to the "Call Admission Control" chapter in *Cisco Unified CallManager System Guide*.
Step 3	To use a Cisco video conference bridge, configure the appropriate conference bridge for your network.	• Refer to the "Conference Bridge Configuration" chapter in *Cisco Unified CallManager Administration Guide*.
Step 4	To configure a user to use the video conference bridge instead of other conference bridges, configure the media resource groups and media resource group lists for the user.	• Refer to the "Media Resource Group Configuration" chapter in *Cisco Unified CallManager Administration Guide*. • Refer to the "Media Resource Group List Configuration" chapter in *Cisco Unified CallManager Administration Guide*.

Region Configuration in Cisco Unified CallManager

This section provides an overview of how regions were configured in the Very Large Campus Clustering over the WAN deployment model. These configurations were made in Cisco Unified CallManager Administration.

For additional information about regions, refer to *IP Video Telephony Solution Reference Network Design (SRND) for Cisco Unified CallManage*r. (Table 12-1 provides a link to this document.)

The total bitrate for the video bandwidth of the region should be set to accommodate the total bitrate of the video and audio RTP streams used in video calls.

Table 12-19 shows the regions matrix that was created in Cisco Unified CallManager.

Table 12-19   Regions Matrix

	Default	SIP	SJC-Local	Video	WAN
Default	G.711/384	G.711/None	G.711/384	G.711/384	G.711/384
SIP	G.711/None	G.711/None	G.711/None	G711/None	G.711/None
SJC-Local	G.711/384	G.711/None	G.711/384	G.711/384	G.729/384
Video	G.711/384	G.711/None	G.711/384	G.711/384	G.711/384
WAN	G.711/384	G.711/None	G.711/384	G.711/384	G.711/384

The following devices were assigned to the regions shown:

- SJC-Local region—Includes all phones without video capabilities, CTI ports, voice mail ports, conference bridges, transcoders, and PSTN gateways without video capabilities.

- SIP region—Includes SIP trunks to Cisco Unified CallManager 4.(x).

- Video region—To provide the maximum level of interoperability and features, these video endpoints have been assigned to this region:

    - Cisco Unified Video Advantage associated with Cisco Unified IP Phone 7940G/7941G/7960G/7961G/ 7970G/7971G running SCCP.

    - Cisco Unified IP Phone 7985

    - Polycom H.323 video endpoints. (The Polycom VSX 7000 with firmware version 8.0.3 supports G.722, G.722.1, G.711, G.728, audio codecs.)

    - SCCP Tandberg T1000 video endpoints.

    - SCCP Tandberg MXP video endpoints.

    - H.323 Tandberg 990 MXP video endpoints

    - Cisco Unified Videoconferencing 3540 MCU SCCP Video Conference Bridge.

    - Cisco Unified Videoconferencing 3540 MCU H.323 Gateway.

- WAN region—Includes H.225 intercluster trunks and SIP trunks to other cluster.

Note   For additional information about codecs support by endpoints, refer to the "Endpoints" section in *IP Video Telephony Solution Reference Network Design (SRND) for Cisco Unified CallManage*r. (Table 12-1 provides a link to this document.)

H.245 Capabilities Exchange with Intercluster Trunks

The codec specified for a region is the maximum codec that will be exchanged during an intercluster trunk call. For example, the Cisco Unified IP Phone 7960G supports G.729, G.711, and Cisco wideband audio codec. If audio codec between two regions is configured for G.711, Cisco Unified CallManager will advertise G.711 and G.729, not G.711 only. If audio codec between two regions is configured for G.729, Cisco Unified CallManager will advertise only G.729 because the phone does not support a lower bandwidth codec.

SIP Trunk Calls with Asymmetric Regions

This section provides an overview of two asymmetric regions scenarios for intercluster calls across SIP trunks.

Scenario 1—Device with an associated Cisco Unified Video Advantage in Region A calls a device in Region D through an intercluster trunk

In this scenario, a call proceeds as follows:

Region A – SJC Cisco Unified CallManager – Region B – SIP trunk – Region C – DFW Cisco Unified CallManager – Region D

The regions include the following devices:

- Region A (Video)—All video enabled phones, including Cisco Unified Video Advantage
- Region B (SJC-WAN)—All intercluster trunks
- Region C (DFW-WAN)—All intercluster trunks
- Region D (SJC-Local)—All devices without video capabilities

Table 12-20 shows the regions matrix for SJC.

Table 12-20   SJC Regions Matrix

	Region A	Region B
Region A	G.711/384	G.711/384
Region B	G.711/384	G.729/384

Table 12-21 shows the regions matrix for DFW.

Table 12-21   DFW Regions Matrix

	Region C	Region D
Region C	G.729/384	G.729/384
Region D	G.729/384	G.711/384

When a device with an associated Cisco Unified Video Advantage in Region A calls through an intercluster trunk in Region B, G.729 and G.711 codecs are sent from SJC to DFW during the capabilities exchange process.

The call will arrive at DFW through an intercluster trunk in Region C and will then be routed to a device in Region D. Only the G.729 codec will be sent from DFW to SJC during the capabilities exchange process.

After the capabilities exchange process completes, the call will connect using the G.729 codec.

Scenario 2—H.323 video endpoint with only G.711 capabilities in Region A calls a device in Region E through an SIP trunk

In this scenario, a call proceeds as follows:

Region A – SJC Cisco Unified CallManager – Region B – Transcoder – Region C – Intercluster trunk – Region D – DFW Cisco Unified CallManager – Region E

The regions include the following devices:

- Region A (Video)—All video enabled phones, including Cisco Unified Video Advantage
- Region B (SJC-Local)—All devices without video capabilities
- Region C (SJC-WAN)—All intercluster trunks
- Region D (DFW-WAN)—All intercluster trunks
- Region E (DFW-Local)—All devices without video capabilities

shows the regions matrix for SJC.

Table 12-22   SJC Regions Matrix

	Region A	Region B	Region C
Region A	G.711/384	G.711/384	G.711/384
Region B	G.711/384	G.711/384	G.729/384
Region C	G.711/384	G.729/384	G.729/384

shows the regions matrix for DFW.

Table 12-23   DFW Regions Matrix

	Region D	Region E
Region D	G.729/384	G.729/384
Region E	G.729/384	G.711/384

When an H.323 video endpoint in Region A calls through an intercluster trunk in Region B, only the G.711 codec is sent from SJC to DFW during the capabilities exchange process.

The call will arrive at DFW through an intercluster trunk in Region C and will then be routed to a device in Region D. Only the G.729 codec will be sent from DFW to SJC during the capabilities exchange process.

After the capabilities exchange process completes, the call will connect using the G.729 codec.

The Cisco Unified CallManager at SJC will invoke a transcoder between the H.323 video device and the intercluster trunk. The transcoder will transcode the call between the G.729 and the G.711 codecs.

Transcoders and Call Transfer

This section provides an overview of a call-transfer scenario that involves a legacy transcoder.

Note   Cisco legacy transcoders (6608, CMM ACT, NM-HDV) currently do not support video pass-through. If a video call is sent through a transcoder, the call will become an audio-only call.

Before the call is transferred in this scenario, it proceeds as described for Scenario 2 in the "SIP Trunk Calls with Asymmetric Regions" section on page 12-19. That is, an H.323 video endpoint with only G.711 capabilities in Region A calls a device in Region E through an intercluster trunk.

After the call is established, it is transferred by the device in Region E to a local video endpoint in Region F In this call-forward scenario, the call proceeds as follows:

Region A – SJC Cisco Unified CallManager – Region B – Transcoder – Region C – Intercluster trunk – Region D – transcoder – Region E – DFW Cisco Unified CallManager – Region F

The regions include the following devices:

- Region A (SJC-Video)—All video enabled phones, including Cisco Unified Video Advantage
- Region B (SJC-Local)—All devices without video capabilities
- Region C (SJC-WAN)—All intercluster trunks
- Region D (DFW-WAN)—All intercluster trunks
- Region E (DFW-Local)—All devices without video capabilities
- Region F (DFW-Video)—All video enabled phones, including Cisco Unified Video Advantage

Table 12-24 shows the regions matrix for SJC.

Table 12-24   SJC Regions Matrix

	Region A	Region B	Region C
Region A	G.711/384	G.711/384	G.711/384
Region B	G.711/384	G.711/384	G.729/384
Region C	G.711/384	G.729/384	G.729/384

Table 12-25 shows the regions matrix for DFW.

Table 12-25   DFW Regions Matrix

	Region D	Region E	Region F
Region D	G.729/384	G.729/384	G.711/384
Region E	G.729/384	G.711/384	G.711/384
Region F	G.711/384	G.711/384	G.711/384

If the H.323 video endpoint in SJC called directly to an H.323 video endpoint in DFW, a transcoder would not be invoked and video would be available for the call. However, in this scenario, a transcoder is invoked before the call is transferred. Therefore, video is not available after the call transferred.

Note   This transfer scenario applies to all calls transferred via Cisco Unity Automated Attendant and via Cisco IPCC Express.

Video Deployment with RSVP

You can use Cisco RSVP Agent to control video bandwidth. Such a deployment could be use in a situation where an audio device can use only G.711 and audio transcoding is necessary.

Cisco RSVP Agent is an IOS-based RSVP proxy with an SCCP interface and is the only method for performing audio transforming of a video call. Cisco RSVP Agent registers to Cisco Unified CallManager through SCCP as an MTP or transcoder. Video endpoints do not need to support RSVP, but they do need to be allocated a media resource group that contains a Cisco RSVP agent. When RSVP or audio transcoding is required, Cisco Unified CallManager inserts a Cisco RSVP Agent in the call to perform RSVP reservation or transcoding.

In addition to Cisco RSVP Agent, you can use Cisco Unified CallManager region and location settings to establish video bandwidth for a call. However, with the introduction of RSVP agent in video call, the following rule is required to establish the bandwidth for a video call:

```
end-to-end video region = minimum of (region (A,agentA), region(agentA,agentB),
region(agentB,B) and region(A,B) )
```

Figure 12-3 shows a basic video deployment using Cisco RSVP Agent.

Figure 12-3   Basic Video Deployment with Cisco RSVP Agent
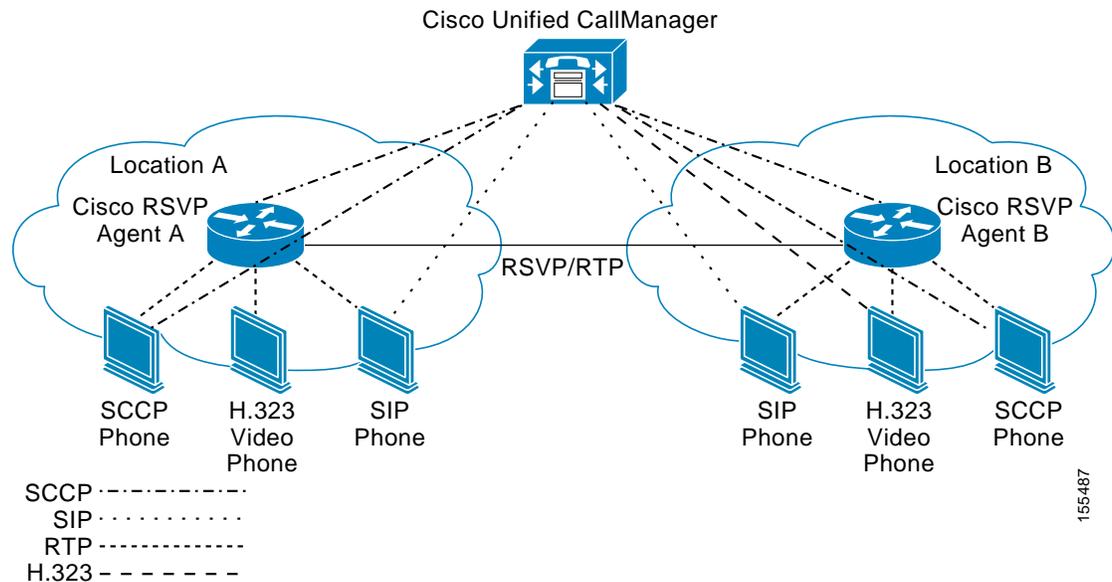
The following configuration was used for the Cisco RSVP Agent. The codec pass-through allows the audio transcoding of a video call:

```
dspfarm profile 2 transcode
 codec pass-through
 codec gsmfr
 codec g729ar8
 codec g729abr8
 codec g711ulaw
 codec g711alaw
 rsvp
 maximum sessions 8
 associate application SCCP
```

The following command confirms that the Cisco RSVP Agent is configured properly:

```
SCCP Admin State: UP
User Masked Codec list: None
Call Manager: 10.10.110.11, Port Number: 2000
              Priority: 1, Version: 5.0.1, Identifier: 1
Transcoding Oper State: ACTIVE - Cause Code: NONE
Active Call Manager: 10.10.110.11, Port Number: 2000
TCP Link Status: CONNECTED, Profile Identifier: 2
Reported Max Streams: 16, Reported Max OOS Streams: 0
Supported Codec: pass-thru, Maximum Packetization Period: N/A
Supported Codec: gsmfr, Maximum Packetization Period: 20
Supported Codec: g729ar8, Maximum Packetization Period: 60
Supported Codec: g729abr8, Maximum Packetization Period: 60
```

```
Supported Codec: g711ulaw, Maximum Packetization Period: 30
Supported Codec: g711alaw, Maximum Packetization Period: 30
RSVP : ENABLED
```

Gatekeeper Configuration in Cisco Unified CallManager

This section describes how gatekeepers were configured for video endpoints in Cisco Unified CallManager Administration.

For additional information, refer to the "Gatekeeper Configuration" chapter in *Cisco Unified CallManager Administration Guide*.

To access the Cisco Unified CallManager Administration web pages for adding and configuring gatekeepers, choose **Device > Gatekeeper** from the Cisco Unified CallManager Administration application.

Table 12-26 shows how one of the gatekeepers was configured in the Very Large Campus Clustering over the WAN deployment model.

Table 12-26   Gatekeeper Configuration

Field	Setting
Host Name/IP Address	Host Name/IP Address[1]
Description	SJC-RFD-GK-1
Registration Request Time To Live	60
Registration Retry Timeout	300
Enable Device	Checked

1. Only the primary gatekeeper address in a cluster is required.

MCU Configuration in Cisco Unified CallManager

The following sections describe how Cisco Unified CallManager was configured with the Cisco Unified Videoconferencing 3540 MCU. This MCU registers with Cisco Unified CallManager as a video conference bridge. It also functions as a stand-alone H.323 video conferencing resource.

- SCCP Video Conference Bridge
- H.323 Video Conference Bridge

For additional information, refer to the "Conference Bridges" chapter in *Cisco Unified CallManager System Guide*. (Table 12-1 provides a link to this document.)

SCCP Video Conference Bridge

To access the Cisco Unified CallManager Administration web pages for adding and configuring video endpoints, choose **Media Resources > Conference Bridge** from the Cisco Unified CallManager Administration application.

Table 12-27 shows how the video conference bridge was configured in the Very Large Campus Clustering over the WAN deployment model. Fields not shown in this table were set to their default values.

Table 12-27   MCU SCCP Video Conference Bridge Configuration

Field	Setting
Conference Bridge Type	Cisco Video Conference Bridge (Cisco Unified Videoconferencing-35xx)
MAC Address	0003D60028CE
Description	VCB0003D60028CE
Device Pool	DP-Video
Location	SJC

After this video conference bridge was added to Cisco Unified CallManager, it was added to a media resource group. This media resource group was then added to a media resource group list, which was assigned to all video-enabled phones.

For additional information, refer to the "Media Resource Management" chapter in *Cisco Unified CallManager System Guide*. (Table 12-1 provides a link to this document.)

H.323 Video Conference Bridge

An H.323 gateway was created to allow Cisco Unified CallManager to route calls to the H.323 video conference bridge.

To access the Cisco Unified CallManager Administration web pages for adding and configuring gateways, choose **Device > Gateway** from the Cisco Unified CallManager Administration application.

Table 12-28 shows how the MCU H.323 gateway was configured in the Very Large Campus Clustering over the WAN deployment model Fields not shown in this table were set to their default values.

Table 12-28   MCU H.323 Gateway Configuration

Field	Setting
Device Name	10.9.14.14
Description	SJC-RFD-MCU-1
Device Pool	DP-Video
Call Classification	OnNet
Media Resource Group List	MRGL_SJC_VIDEO
Location	SJC
AAR Group	SJC
Signaling Port	2720
Media Termination Point Required	Unchecked
Retry Video Call as Audio	Checked
Wait for Far End H.245 Terminal Capability Set	Checked
Multilevel Precedence and Preemption (MLPP) Information	Not applicable
Significant Digits	All
Calling Search Space	SJC_CSS

Table 12-28   MCU H.323 Gateway Configuration (continued)

Field	Setting
AAR Calling Search Space	SJC_CSS
Prefix DN	blank
Redirecting Number IE Delivery – Inbound	Uncheked
Enable Inbound FastStart	Uncheked

Route Pattern Configuration for MCU Service

Cisco Unified CallManager routes outbound calls to the MCU via this H.323 gateway utilizing a route pattern. In Very Large Campus Clustering over the WAN deployment model this route pattern was 21XXX.

Note   The route pattern must begin with the same digits as the service prefix configured on the Cisco Unified Videoconferencing 3540 MCU.

Cisco Unified Videoconferencing PSTN Gateway Configuration for Cisco Unified CallManager

These sections describe how the PSTN gateway was configured for Cisco Unified Videoconferencing:

Video PSTN Gateway

A Cisco Unified Videoconferencing gateway registers as a gateway on Cisco Unified CallManager, and it uses a specific signaling port. Table 12-29 lists the signaling port for each type of MCU and gateway.

Note   If you want to use the 1720 standard value for the signaling port on Cisco Call Manager configuration, you can change this value for Cisco Unified Videoconferencing devices.

Table 12-29   Cisco Unified Videoconferencing MCU and Gateway Signaling Ports

MCU and Gateway Type	Default Signaling Port
3540	1820
3526	1820
3521	1920
3511	2720

> **Note** By default, Cisco Unified CallManager waits for and endpoint to sent its capability before Cisco Unified CallManager sends a Terminal Capability Set. However, calls from Cisco Unified Video Advantage to an H.323 device require Cisco Unified Call Manager to send its capability immediately, without waiting for the destination endpoint to send its capability first. Otherwise, calls may fails due to capability negotiation issues.
>
> To avoid this situation, uncheck the Wait for Far End H.245 Terminal Capability Set parameter in the configurations for Cisco Unified Video Conferencing and for H.323 clients.

Route Pattern Configuration for Cisco Unified Videoconferencing PSTN Gateways

Cisco Unified CallManager routes outbound calls to the Cisco Unified Videoconferencing PSTN gateway via a H.323 gateway utilizing a route pattern. In the Very Large Campus Clustering over the WAN deployment model this route pattern was 79XXX.

> **Note** The route pattern must begin with the same digits as the service prefix configured on the Cisco Unified Videoconferencing 3540 PSTN gateway

The Cisco Unified Videoconferencing gateway registers with a prefix followed by the #. Cisco Unified CallManager was configured with a route pattern that sends all outgoing video PSTN calls to the Cisco Unified Videoconferencing gateway and that inserts the # after the Video PSTN prefix. This route pattern is in a partition that can be reached only by video endpoints. Video endpoint will use the Cisco Unified Videoconferencing gateway for audio and video PSTN calls.

For example, assume that a user dials 79 as the PSTN prefix and that the required route pattern is 79.XXXXXXXXXX.

To create this route pattern, Called Party Transformation was applied with the following settings:

- Discard Digits: PreDot
- Prefix Digits (outgoing calls): 79#

In this case, when a user dials 790123456789, Cisco Unified CallManager sends an H.225 Setup message to the Cisco Unified Videoconferencing gateway with a called number of 79#0123456789.

Video Endpoints Configuration

The following sections describes how Cisco Unified CallManager was configured for Tandberg endpoints:

For additional information about how Cisco Unified CallManager was configured for the Very Large Campus with Clustering over the WAN site model, see Chapter 2, "Cisco Unified CallManager Configuration."

For additional information about adding and configuring phones and endpoints in Cisco Unified CallManager, refer to the "Cisco Unified IP Phone Configuration" chapter in *Cisco Unified CallManager Administration Guide*.

Phone Configuration for Tandberg SCCP Video Endpoints

To access the Cisco Unified CallManager Administration web pages for adding and configuring video endpoints, choose **Device > Phone** from the Cisco Unified CallManager Administration application.

TANDBERG Video Endpoint will appear as a phone device type in Cisco Unified CallManager Administration only if you first install the Tandberg Cisco Unified CallManager Plug-in on the publisher node in the cluster. For information about accessing and installing this patch, see your Tandberg documentation.

One Tandberg SCCP video endpoint was configured for the Very Large Campus Clustering over the WAN deployment model. Table 12-30 shows how this device was configured. Field not shown in shown in this table were set to their default values.

Table 12-30   Phone Configuration for Tandberg SCCP Video Endpoint

Field	Setting
MAC Address	00506000FAD6
Description	SJC Tandberg-1
Owner User ID	blank
Device Pool	DP-Video
Calling Search Space	SJC_CSS

Phone Configuration for Gatekeeper-Controlled H.323 Video Endpoints

To access the Cisco Unified CallManager Administration web pages for adding and configuring video endpoints, choose **Device > Phone** from the Cisco Unified CallManager Administration application.

The video endpoints were entered in Cisco Unified CallManager Administration as an H.323 client device model type.

Table 12-31 shows how one of these devices was configured. Fields not shown in this table were set to their default values.

Note   All gatekeeper-controlled H.323 endpoints that are assigned to the same device pool and Cisco Unified CallManager group must be configured with the same zone setting.

Table 12-31   Phone Configuration for Gatekeeper-Controlled H.323 Video Endpoint

Field	Setting
Device Name	SJC-TBERG-2
Description	SJC Tandberg-2
Device Pool	DP-Video
Common Phone Profile	Standard Common Phone Profile

Table 12-31   Phone Configuration for Gatekeeper-Controlled H.323 Video Endpoint (continued)

Field	Setting
Calling Search Space	SJC_CSS
AAR Calling Search Space	SJC_css
Media Resource Group List	MRGL_SJC_Video
Location	SJC
Signaling Port	1720
Owner User ID	51002
Retry Video Call as Audio	Checked
Wait for Far End H.245 Terminal Capability Set	Checked
Ignore Presentation Indicators (internal calls only)	Unchecked
Protocol Specific Information	
SRTP Allowed	Unchecked
MTP Preferred Originating Codec	*No applicable*
SUBSCRIBE Calling Search Space	<None>
Media Termination Point Required	Unchecked
Unattended Port	Unchecked
H.323 Information	
Outgoing Caller ID Pattern	blank
Calling Party Selection	Originator
Display IE Delivery	Checked
Redirecting Number IE Delivery Outbound	Unchecked
Redirecting Number IE Delivery Inbound	Unchecked
Gatekeeper Information	
Gatekeeper Name	10.4.100.5
E.164	2600as1
Technology Prefix	1#*
Zone	SJC-VIDEO-GK1
MLPP Information	
MLPP Domain	<None>
Secure Shell Information	
Secure Shell User	blank
Secure Shell Password	blank

Phone Configuration for Non-Gatekeeper-Controlled H.323 Video Endpoints

To access the Cisco Unified CallManager Administration web pages for adding and configuring video endpoints, choose **Device > Phone** from the Cisco Unified CallManager Administration application.

This video endpoints were entered in Cisco Unified CallManager Administration as an H.323 client device model type.

Table 12-32 shows how this device was configured. Fields not shown in this table were set to their default values.

Table 12-32   Phone Configuration for Non-Gatekeeper-Controlled H.323 Video Endpoint

Field	Setting
Device Name	*IP address of the H.323 endpoint*
Description	SJC Tandberg-2
Device Pool	DP-Video
Common Phone Profile	Standard Common Phone Profile
Calling Search Space	SJC_CSS
AAR Calling Search Space	SJC_css
Media Resource Group List	MRGL_SJC_Video
Location	SJC
Signaling Port	1720
Owner User ID	blank
Retry Video Call as Audio	Checked
Wait for Far End H.245 Terminal Capability Set	Checked
Ignore Presentation Indicators (internal calls only)	Unchecked
Protocol Specific Information	
SRTP Allowed	Unchecked
MTP Preferred Originating Codec	*No applicable*
SUBSCRIBE Calling Search Space	<None>
Media Termination Point Required	Unchecked
Unattended Port	Unchecked
H.323 Information	
Outgoing Caller ID Pattern	blank
Calling Party Selection	Originator
Display IE Delivery	Checked
Redirecting Number IE Delivery Outbound	Unchecked
Redirecting Number IE Delivery Inbound	Unchecked
Gatekeeper Information	
Gatekeeper Name	10.4.100.5
E.164	2600as1
Technology Prefix	1#*
Zone	SJC-VIDEO-GK1
MLPP Information	
MLPP Domain	<None>

Table 12-32   Phone Configuration for Non-Gatekeeper-Controlled H.323 Video Endpoint

Field	Setting
Secure Shell Information	
Secure Shell User	blank
Secure Shell Password	blank

Phone Configuration for SCCP Video Endpoints with Associated Cisco Unified Video Advantage

Cisco Unified Video Advantage clients were installed and configured for the Very Large Campus with Clustering over the WAN site model and for the Large SIP Site deployment model. These Cisco Unified Video Advantage clients were installed on a mix of phone models, including the Cisco IP Phone 7940G/7941G/7960G/7961G/7970G/7971G.

Note   Cisco Unified VT Advantage version 1.0(2) is supported only on SSCP phones.

For additional information about installing Cisco CT Advantage and configuring Video endpoints in Cisco Unified CallManager, refer to the following documents. (Table 12-1 provides links to these documents.)

- "Understanding Video Telephony" chapter in *Cisco Unified CallManager System Guide*
- *Cisco Unified Video Advantage Administration Guide*

To configure a phone with an associated Cisco Unified Video Advantage, choose **Device > Phone** from Cisco Unified CallManager Administration.

Table 12-33 shows how this device was configured. Fields not shown in this table were set to their default values.

Table 12-33   Phone Configuration for Non-Gatekeeper-Controlled H.323 Video Endpoint

Field	Setting
Video Capabilities	Enabled